DOCUMENT RESUME

ED 223 922 CG 016 324

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TITLE Two Modes of Processing Affect in Social Cognition.
PUB DATE Aug 82
NOTE 23p.; Paper presented at the Annual Convention of the American Psychological Association (90th, Washington, DC, August 23-27, 1982).
PUB TYPE Information Analyses (070) -- Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adults; Affective Behavior; Emotional Response; *Interpersonal Attraction; *Interpersonal Relationship; Prosocial Behavior; Recall (Psychology); *Reliability; *Social Attitudes; *Social Cognition; Socialization; State of the Art Reviews; *Stereotypes

ABSTRACT

A fundamental problem in social cognition and person perception is the issue of consistency in impressions. Some conditions encourage people to stereotype others while other conditions encourage people to abandon their stereotypes. A study was conducted to identify the different kinds of eliciting conditions for piecemeal vs. stereotype processing and to show initial support for the dual-mode notion. Subjects saw a series of people described in terms of their jobs or attributes. In all cases stereotyping was more efficient than piecemeal processing or switching from one to the other. Piecemeal processing requires the perceiver to deal at the level of individual attributes not related to each other, and allows no guides to memory because there is no organized prior unit that represents the person. (JAC)

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Two modes of processing affect in social cognition

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CG 016324

Paper delivered at the Symposium on Affect and Cognition, meetings of the American Psychological Association, Washington, D. C., August 1982. Essentially the same text was an invited paper delivered at the meetings of Midwestern Psychological Association, Minneapolis, April 1982.

Stereotype or Piecemeal:

Two Modes of Reacting to Others

A fundamental problem in social cognition and person perception is the issue of consistency in impressions. Quantities of work on stereotyping, impression formation, and social schemata suggest that people try to maintain their initial conceptions as long as possible. Yet, under some conditions, people do attend to information that contradicts those initial assumptions. If an impression is going to change--and impressions do sometimes change-- it will only be through contact with discrepant information. Thus, the question is: When do people attend, judge, and remember on the basis of inconsistent information? Some conditions encourage people to stereotype others, to use only consistent information. Some conditions encourage people to abandon their stereotypes, to notice their encounters with inconsistent information. The current hypothesis is that the conditions that emphasize consistency and inconsistency each elicit distinct modes of affective and cognitive processing. It is useful to consider each set of conditions in turn.

Stereotyping

People persist in making assumptions about other people. Stereotyping is the rule, all other things being equal, for reasons we will see shortly. What are the effects of those assumptions or stereotypes? And how else might people react to others beside stereotyping them?

Stereotypes are assumptions people make about others.

To begin with one of my favorite everyday examples, I for one have learned not to tell strangers on planes that I'm a psychologist, and I have learned that the hard way. Other people have a tendency to react in one of two ways if you say you're a psychologist. Either they draw back in horror of being analyzed on the spot or they lean forward in confidence to tell you all their dark inner secrets. It does no good to tell them you're a researcher and not a clinician. Some psychologists have taken to describing themselves as computer programmers to get around this problem. I have hit upon an alternative solution, which is to tell people on airplanes that I study how people make first impressions on strangers. That turns out to be a real conversation stopper. Now the point here is not so much to give you tips for avoiding troublesome seatmates on planes. Rather the point is that people's erroneous assumptions about other people are a bother to the target person, but they are adaptive for the social perceiver.

Stereotypes are not inherently bad; they simply are a fact of the cognitive system. Stereotypes serve useful functions. First, they serve to guide the processing of new information and in particular, they guide attention to the relevant features of the stimulus person. For example, the peson next to me on the plane may particularly notice my empathically warm smile more than the printouts that I am perusing. The stranger on the plane is also aided in interpreting ambiguous information by this stereotype. So, for example, the person might interpret the smile as warm if well disposed toward clinicians or as mocking if not well disposed toward clinicians. A stereotype also enables people to retrieve

information efficiently; thus the person on the plane is likely to remember one's seemingly insightful words. Finally, a stereotype guides the interaction. So, for example, if seatmates think one is a clinician and not a researcher, they are much more likely to be self-revealing.

This kind of analysis in terms of the informational aspects of stereotypes contrasts with the traditional sociological analysis of stereotyping, which generally operates in terms of socialization and competition between groups. Ingroup socialization and group-level competition between the races, between sexes, between ethnic groups, and so on does explain important features of stereotyping. The cognitive approach on the other hand argues that there are important individual-level processes that explain why stereotyping operates the way that it does.

The cognitive approach also contrasts with a motivational analysis, which does operate on the individual level. However, the motivational analysis of stereotypes traditionally has looked at stereotypes as the projection of unacceptable impulses. The groups that are stereotyped are seen as scapegoats, and the stereotypes are seen as pathological at best or irrational at worst. In contrast, the argument here is that stereotypes serve normal cognitive functions, which will be elaborated in a moment.

Stereotypes serve useful cognitive and affective functions

This view of stereotypes is not new; it is as old as Walter Lippmann (1922) or Gordon Allport (1954). But there is a new wave of cognitive stereotype research based on the premise that people use stereotypes because of limitations in cognitive capacity. Stereotypes are useful shortcuts for the cognitive system, as current research shows (Hamilton,

1981 ; Miller, 1982). The particular focus here is on the processing of affect, not on the processing of ordinary information. The reason for that is that affect has been neglected by the newer cognitive approaches to stereotyping, but affect is one of the main reasons why stereotypes matter. It is important first to see why affect is not simply one more item of information. To define affect: the use of the term here refers to evaluative responses to other people, that is, responses that vary at least in their degree of positivity and negativity. Affect could be differentiated along other dimensions than that (most likely level of arousal; Russell, 1979), but that will not concern us here. For these purposes, affective responses are liking responses as opposed to, say, simply remembering facts about another person.

The basic premise is that a stereotype allows an immediate affective response as a function of the person's category. As soon as a person knows that somebody is a psychologist, for example, the perceiver knows what response to have: "I know that type and I know what I think of them." Stereotypes are an efficient way to process affect, in ways to be described shortly. Normatively, then, stereotypes are not necessarily bad. By some abstract standards, a stereotype actually serves a useful function. Stereotypes guide attention, they guide interpretation of ambiguous inputs, they guide memory, they guide behavior, and they also guide affect. And given that people do not have unlimited mental capacities, we need all the help we can get; stereotypes are one such aid.

Stereotypes are maladaptive when unresponsive to feedback.

Although stereotypes serve useful functions, they are not adaptive

when they are impervious to data. Let us suppose the following scenario. A certain first year female assistant professor goes to the bookstore to place the order for the fall reading list, and the conversation with the person behind the counter goes something like this: "I'd like to order the books for a course." The clerk says "The books aren't in yet for the fall semester." "I know," is the reply, "I'd like to order the books for the course." "Well, what books does the professor want?" "I am the professor," is the reply, whereupon the clerk exits redfaced to fetch the proper forms and the professor is frustrated.

The point is that this is not such an unusual example, that stereotypes often malfunction, and when they do, interactions become strained instead of eased. Stereotypes malfunction when their assumptions do not fit. The assumptions can be wrong about the category, for example, the idea that professors cannot be female was operating here. Or the person could be put in the wrong category, as when the faculty member was perceived to be first a student and then a secretary. Even if the perceiver has the right person in the right category, stereotyping does violence to the unique individuality of the person being stereotyped. Nobody ever totally fits a category, so all stereotypes cause some errors because the generic case intrudes on the individual instance.

Stereotypes operate generically, not at the level of category instances or individual attributes.

This brings us to the last point about stereotypes, which is that they are fundamentally generic. One way to acknowledge that stereotypes are fundamentally generic is to call them cognitive schemata. This view of stereotyping is related to work in cognitive and social cognitive

psychology on schemata, prototypes, categories and related notions. What this work has in common that concerns us here is the emphasis on abstracted prior knowledge as an aid to understanding incoming data. The ways that stereotypes are importantly generic are two: first they are an abstracted example, not a collection of all the instances ever encountered. Your stereotype of a professor is stored as an abstracted example, not as a collection of all the professors you've ever met. Second, the stereotype makes a tighter unit out of individual attributes. You are no longer dealing with isolated details of a person; you're dealing at the level of a group of attributes that operate as a whole. So, for example, if you know somebody wears tweed, drives a small cheap foreign car, and is introverted, forgetful, and smart, those facts tend to go together because they fit your professor stereotype. In summary, a stereotype is a proxy for the various attributes and behavior and lower-order concepts related to the person.

Piecemeal Perceptions

In order to frame a better understanding of how stereotypic processing operates, it is helpful to consider: As opposed to what? How else could people deal with other people besides stereotyping them? As an alternative to the stereotypic mode, I'd like to suggest a piecemeal mode of reacting to others. Piecemeal perceptions are in marked contrast to the generic wholistic mode of stereotyping.

Piecemeal perceptions operate elementally.

They are fundamentally elemental, first. That is, they deal from the bottom-up or they are data-driven, as opposed to stereotypes which deal

from the top-down and are theory-driven. Piecemeal processing operates at the level of the individual not an abstraction, and it operates at the level of individual attributes not at the level of larger units. The idea of pitting piecemeal processes against stereotyping evokes some longer term controversies between wholistic and elemental approaches to psychology which date back at least to the Gestalt psychologists versus Wundt (Boring, 1950) or in social psychology specifically, the two models Solomon Asch (1946) originally proposed in person perception (Fiske & Taylor, in preparation). One of them was a configural model and the other was an algebraic model, which are respectively similar to the stereotypic versus the piecemeal model. The conception is also related to recent work by Carlston (1980), by Lingle and Altom (1979), and others. It is important to be clear from the outset that the piecemeal approach is not being set up as a straw person. Both modes can operate; both piecemeal and stereotypic processes do operate but under different conditions, and we are interested here in what those different conditions might be.

Piecemeal processes are characterized by elemental approaches to the individual involved (Fiske, 1982). In social psychology some of the people who do this sort of work include Norman Anderson (1974), and Fishbein and Ajzen (1974). In piecemeal processes, the stimulus is broken into elements, and the perceiver analyzes the impact of each piece on its own merit without looking at its relationship to the whole. There is no meaning change as a function of context. How might cognitive processes operate in these models? Attention in the piecemeal mode is a function of each isolated attribute in turn, not of the configuration. There are no guides to memory for the data based on the total impression or prior

impressions. And affect is a function of the combined individual items of information. In other words, as one encounters each item of information, one weights it, averages them, and comes up with a summary of evaluation.

Piecemeal modes are useful when there exists no prior stereotype.

To give a new example, upon moving to Pittsburgh, I encountered a new stereotype which I myself do not endorse, but it is an interesting one. It included people who had fierce city loyalty, were friendly and direct, were devoted sports fans (especially to the Steelers but to the Pirates also if they were winning), tended to wear t-shirts year around, and drank Iron City beer. Now, the piecemeal model posits that affective responses to such people will come from a component-by-component evaluation. You decide how you feel about city loyalty, about people who are friendly and direct, about sports fans and so on. As each component contributes its evaluation to the running total, they are combined by averaging. Now this is a laborious process, perhaps, but it is necessary when there are no prior stereotype.

Piecemeal processes are useful when no prior stereotype fits.

Having learned that the people just described were said to fit the local steelworker type, suppose one meets some people who call themselves "mill hunks," which is a slang term for steelworkers. But then suppose some "mill hunks" who seem to fit the stereotype except that they are female, radical, and athletic. People who do not fit the generic stereotype force a switch from the stereotypic to the piecemeal mode. This is a mixed mode of perception because one begins by stereotyping but ends

by dealing with the individual person and with the individual attributes of the person. Throw the category away and the perceiver is left with the raw data.

Piecemeal perceptions are less efficient than stereotypes.

When one can not bring prior knowledge to bear, one must work with the information given. If you have to recalculate from the raw attributes every time, your affective response is going to take longer than if it is accessible directly at the category level. Although this model requires some elaboration--and we do not have the time here--the basic premise is that affect is linked to one item of information in stereotypic processing and to several in piecemeal processing. Affective responses, then, are one way that piecemeal perceptions are inefficient. Piecemeal perceptions also provide no guides for inference. How does one go beyond the information given when operating at a piecemeal level? If somebody is a steelworker and likes Hustler magazine but is also a woman, how does one predict whether or not she will also like Road and Track magazine? Finally, there are no prior guides to memory. Only the episodic trace is stored. There is no convenient way to explain how people store the information as interrelated pieces. So, in sum, then, piecemeal perceptions are less efficient than stereotypes: they do not guide attention, they do not guide inference, and they do not guide memory.

Predictions

I'd like to talk about some research here and make some predictions on the basis of these two models. The first prediction is that stereotyping

is the rule; people will attempt to stereotype other people simply because it is more efficient and thus the default option; that's how the system operates, all other things being equal. However, piecemeal processes will occur either when no prior stereotype exists or when no prior stereotype fits, in the second case the perceiver is switching from a stereotypic to a piecemeal mode.

Piecemeal processes in contrast to stereotyping will result in slower affective responses. Affect is slow because of operating at the elemental level. The perceiver is operating attribute-by-attribute, as opposed to stereotype-based affect, which is stored at the level of the category. Elsewhere, I've called this schema-triggered affect (Fiske, 1982). This is simply a way of saying that the affective response is available immediately upon categorization. The second prediction is that affect will be more "accurate" in some sense because one is responding to the attributes of the individual, attribute by attribute, and not on the basis of the stereotype. Thirdly, recall responses will be slower in piecemeal processing because there is no organizing principle, and there are fewer links to prior knowledge. For the same reason, recall will be inaccurate. The stereotype provides content links to pre-existing knowledge, but in a piecemeal mode there are fewer guides to memory for content.

Finally, switching exaggerates these effects. Changing from stereotyping to piecemeal mode will be even less efficient than operating in a piecemeal mode in the first place. Because one starts out with the stereotype and switches to piecemeal, that should be more time-consuming.

Research

Briefly, there is some preliminary research testing these ideas, as an example of the different kinds of eliciting conditions for piecemeal vs. stereotype processing and to show some initial support for the dual-mode idea. The study was done with Ann Beattie of Carnegie-Mellon University, and it tests all the predictions just mentioned, with the exception of "accuracy" of affect. We have some other research that does that, which there will not be covered today (Fiske, 1982). To give you the design of this study: subjects saw a series of people who were described in terms of the job they held; job category was the stereotype, then. There was also a list of five traits that described the stimulus people; these were the lower-level attributes. The people were presented on a videotape screen, and there were several conditions. I'll be talking about three within-subject conditions here (see Figure 1). After a warm-up person, subjects saw (in random order), one person who consisted of a job label and consistent attributes. For example, they might see "clothing designer" and with that "creative, sophisticated, fashionable, artistic, exacting." We hypothesized that perceivers would operate in a stereotypic mode, given that these are the trait attributes that undergraduates say go with being a clothing designer. Figure 2 shows the format for the stimulus materials.

In a second stimulus person, subjects are given no job label, only "person" followed by a list of attributes. Given that perceivers have no stereotype, that is, given no category label to use, they have to operate in a piecemeal mode. So, for example, they might be given the word "person" and then "strong, loud, rowdy, redneck, closed-minded." This was not expected to elicit a stereotype immediately; it does happen to fit students' construction worker stereotype, but it was designed and pretested

not to leap out at them instantly.

Finally, the third stimulus person included a label plus inconsistent attributes. For example, perceivers might get the term "construction worker" and the traits "pushy, insensitive, pleasant, insincere, fawning." Note that these attributes are consistent with each other but they do not fit particularly well with the construction worker stereotype. It happens that "pushy, insensitive, pleasant, insincere, fawning" fit with students' salesman stereotype. Overall, in this third condition, we expected perceivers to start out with a stereotypic label (construction worker) and switch to piecemeal processing when they realize that it does not fit very well.

Overall, then, the stereotypes and attribute sets are counterbalanced over the stereotypic, piecemeal, and switching conditions and the design also controlled for the evaluation of the labels and the attributes. Given these stimulus materials, subjects provided a likeability response; we predicted no difference on that because of the counterbalancing. What is of interest here is the timing of the likeability response. People operating in a stereotypic mode ought to respond faster than people operating in a piecemeal mode, who ought to be faster than people switching from stereotype to piecemeal. After they have seen all the stimulus people subjects were asked to recall the attributes, given the label, and the timing of the first item they recalled was measured, that is, how long it took them to mention the first trait. Their memory protocols were also scored for accuracy.

The main prediction is that stereotypes will be more efficient than piecemeal processes which will in turn be more efficient than switching

from stereotype to piecemeal. Figure 3 shows the results. To start out with the speed of affective responses, there was a significant main effect ($F(2,70) = 3.22$, $p < .05$). Notice that stereotyping is faster than piecemeal (although not significantly). Those two each are significantly ($p < .05$) faster than the mode in which people switch from stereotype to piecemeal. As predicted, when they are given a stereotype and a consistent label they are able to provide a likeability response faster. Thus, the hypothesis is supported for the difference between stereotype or piecemeal and switching.

Second, look at the recall results. Although the overall main effect was not significant, the means are exactly as predicted ($F(2,60) = 1.36$, $p = .26$). Again stereotyping seems to be more efficient than piecemeal processing which is more efficient than switching from stereotype to piecemeal, in that the reaction time to the first recall is shorter. However, of these means, only the stereotype and switching modes differ significantly ($p < .05$). These are, of course, the two conditions hypothesized to exaggerate the effect, since switching involves both stereotypic and piecemeal processing.

Finally, look at the accuracy of what subjects recalled. This measure is number of items right minus number wrong.[1] There was a significant main effect ($F(2,60) = 5.34$, $p < .007$) and the means are as predicted. In a stereotypic mode, subjects are the most accurate because prior knowledge

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[1] The results do not differ importantly when the correct and incorrect means are presented separately. In fact, the separate means are informative, but time prevented their presentation in the talk.

can guide their memory. In the piecemeal mode, they are less accurate. In the inconsistent situation, when they are switching, they are least accurate of all. (The piecemeal mean differs from other two at $p < .10$, while the stereotype and switching means again differ the most at $p < .004$.)

To sum up, the piecemeal mode should be less efficient because the perceiver is dealing at the level of individual attributes and that are not related to each other. The clearest support for this view comes from the recall accuracy data. Piecemeal processing also allows no guides to memory because there is not an , organized prior unit that represents the person. The affect and recall response times suggest the piecemeal-stereotyping difference, but nonsignificantly. In all three cases, however, stereotyping is clearly more efficient than switching.

This study is a first step, a sample of the kind of research that could get at the differences between piecemeal and stereotypic processing. Several questions remain. Is the extra time it takes people to react to another person when they are operating in a piecemeal mode a function of attention to inconsistency--as it appears to be--or a function of extended attention to all the information? Some other data do suggest that people spend longer looking specifically at the inconsistent information than they spend than looking at consistent information (Fiske & Erber, 1982). Second, the stimuli are not very ecologically valid. Pared-down stimuli such as these are useful for response-time studies, but we are ultimately more interested in generalizing the process than in claiming that a 3-second latency itself necessarily matters in normal social discourse. Do the stereotypic and piecemeal processes posited also operate for richer

stimuli, for example, with photographic stimulus materials and real people? We are working on that currently. Finally, I'd like to make a comment about the intriguing notion of the accuracy of affect. In piecemeal mode, affect is a function of responses to all the individual attributes and not simply an assimilation to the stereotype. Inconsistency does appear to have effect of emphasizing all the information present and not simply the (negative) stereotype (Fiske, 1982). And, in general, if you're a victim of stereotyping that is the mode that you would prefer, the one that treats you as an individual and not an instance of a category.

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DESIGN

	LABEL + CONSISTENT ATTRIBUTES	NO LABEL; ATTRIBUTES ONLY	LABEL + INCONSISTENT ATTRIBUTES
HYPOTHESIZED PROCESS	STEREOTYPING	PIECEMEAL	SWITCH (STEREOTYPE PIECEMEAL)

CLOTHING DESIGNER

CREATIVE

SOPHISTICATED

FASHIONABLE

ARTISTIC

EXACTING

NOT AT ALL LIKEABLE 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 EXTREMELY LIKEABLE

TYPE YOUR RATING AND THEN HIT "RETURN"

RESULTS

	LABEL + CONSISTENT ATTRIBUTES	NO LABEL; ATTRIBUTES ONLY	LABEL + INCONSISTENT ATTRIBUTES
HYPOTHESIZED PROCESS	STEREOTYPING	PIECEMEAL	SWITCH (STEREOTYPE ↔ PIECEMEAL)
RT TO AFFECT (SEC)	12.49	12.99	15.74
RT TO RECALL (SEC)	8.47	9.75	10.43
ACCURACY OF RECALL	1.19	.55	-.13

RECALL RESULTS IN DETAIL

	LABEL + CONSISTENT ATTRIBUTES	NO LABEL; ATTRIBUTES ONLY	LABEL + INCONSISTENT ATTRIBUTES
HYPOTHESIZED PROCESS	STEREOTYPING	PIECEMEAL	SWITCH (STEREOTYPE ↔ PIECEMEAL)
ACCURATE	2.32	1.29	1.55
INACCURATE	1.13	.74	1.68
SHEER QUANTITY (SUM)	3.45	2.03	3.23
OVERALL ACCURACY (DIFFERENCE)	1.19	.55	-.13